



Pens That Write Right!

Stroke Width Chart for Fountain Pens (Version 2.0.4, revised April 24, 2013)

Stroke Measurement ¹	Stroke Sample ²	Binder Italics ³	Typical Western Round Nibs ³ (Aurora, Bexley, Pelikan, etc.)	Typical Japanese Round Nibs ³ (Namiki & Pilot)	Metric Gel Pens ⁴ (examples)
0.004" = 0.1 mm			— 4XF (Binder) —		
0.008" = 0.2 mm			— 3XF - Needlepoint —		
0.012" = 0.3 mm		— 3XF —	— XXF - Accountant —	— XF —	— uni-ball micro (0.5) —
0.016" = 0.4 mm		— XXF —	— XF —	— F —	— uni-ball fine (0.7) uni-ball bold (1.0) —
0.020" = 0.5 mm		— XF —	— F —		— PaperMate Bold (1.4) —
0.024" = 0.6 mm			— M —	— M —	
0.028" = 0.7 mm		— F —			
0.031" = 0.8 mm			— B —	— B —	
0.035" = 0.9 mm		— M —			
0.039" = 1.0 mm			— BB —		
0.043" = 1.1 mm		— B —			
0.047" = 1.2 mm			— 3B —		
0.051" = 1.3 mm		— BB —			
0.055" = 1.4 mm					

Notes:

- All measurements were made with a 50X microscope (metric reticle, line spacing 0.02 mm).
- The Stroke Sample set was generated with a computer to give you a very accurate metric against which you can measure the strokes of the pens you're evaluating.
- Because no paper is perfectly smooth, parts of any stroke made with a real pen may be broader or narrower than the precise measurement. **The measurements in this chart represent slow strokes drawn by nibs adjusted to the RichardsPens.com "factory" standard for flow and smoothness when filled with Waterman Blue-Black ink and tested on the pads we sell. (A rapid stroke will typically be narrower than the width illustrated.)** Out of the box, many nibs are set too dry and will write narrower than shown here — but they may be prone to skipping or have starting problems. **Different inks, different flow rates, and different papers will produce different results. Even temperature, humidity, and barometric pressure can affect a fountain pen's performance. You should not expect your testing to duplicate exactly the measurements shown here.**
- Measurements for the example metric gel pens shown here were taken with the pens used lightly, as a fountain pen user might use them. Pressing harder will produce a stroke 0.2 to 0.3 mm wider than shown in the chart. **Manufacturers' measurements for these pens represent the physical sizes of the pens' tips, not their stroke widths.**

Measure this scale with a ruler to ensure that your printout is accurately sized.

